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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/708,115

02/10/2004

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EXAMINER

BARAN, MARY C

ART UNIT

PAPER NUMBER

2857

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/708,115	<b>Applicant(s)</b> IWAIZONO, YOSHINORI	
	<b>Examiner</b> MARY C. BARAN	<b>Art Unit</b> 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The action is responsive to the Amendment filed on 2 January 2008. Claims 1-6 are pending. Claims 1 and 5 are amended. Claim 6 is new.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al. (U.S. Patent No. 6,114,839) (hereinafter Takano) in view of Franklin (U.S. Patent No. 5,240,022).

Referring to claim 1, Takano teaches a secondary battery control circuit (see Takano, Abstract), comprising:

a liquid detection section for detecting infiltration or generation of a liquid inside a secondary battery or inside a battery pack in which the secondary battery is installed (see Takano, column 8 lines 1-10 and lines 38-45);

and a control section for interrupting charging/discharging of the secondary battery in a case where a liquid is detected by the liquid detection section (see Takano, column 8 lines 38-56),

wherein the liquid detection section controls the control section (see Takano, column 8 lines 38-56) based on impedance or resistance value detected between two terminals (see Takano, column 7 line 66 – column 8 line 10 and Figure 1 “2b” and “2d”), but does not teach continuously detecting infiltration or generation of a liquid; or two electrically separated terminals, wherein an amount of an electrical current flowing through each of the terminals approaches zero, unless the liquid is detected by the liquid detection section.

Franklin teaches continuously detecting infiltration or generation of a liquid (see Franklin, column 13 lines 46-52); and two electrically separated terminals (see Franklin, Figure 6 leak detection probes 18 and 19), wherein an amount of an electrical current flowing through each of the terminals approaches zero, unless the liquid is detected by the liquid detection section (see Franklin, column 10 lines 12-36).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Takano to include the teachings of Franklin because continuously detecting infiltration or generation of a liquid would have allowed the skilled artisan to reduce the probability that the liquid detection is merely a false alarm, and because maintaining a low current unless a liquid is present would have allowed the skilled artisan to determine a leakage condition (see Franklin, column 10 lines 33-36).

Referring to claim 2, Takano teaches a temperature detection section for detecting a temperature of the secondary battery (see Takano, column 8 lines 51-56), wherein the control section controls charging/discharging of the secondary battery

based on the temperature detected by the temperature detection section (see Takano, column 8 lines 57-67).

3. Claims 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al. (U.S. Patent No. 6,114,839) (hereinafter Takano) in view of Franklin (U.S. Patent No. 5,240,022) and in further view of Darmawaskita (U.S. Patent No. 6,184,659).

Referring to claim 3, Takano and Franklin teach all the features of the claimed invention except that the secondary battery control circuit is formed on a single semiconductor chip.

Darmawaskita teaches that the secondary battery control circuit is formed on a single semiconductor chip (see Darmawaskita, column 4 lines 25-30).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Takano and Franklin to include the teachings of Darmawaskita because forming the control circuit on a single chip would have allowed the skilled artisan to easily implement a battery charger design and reduce the component count thereof (see Darmawaskita, column 4 lines 38-41).

Referring to claim 4, Takano and Franklin teach all the features of the claimed invention except that the single semiconductor chip is enclosed in a sealing section of the secondary battery.

Darmawaskita teaches that the single semiconductor chip is enclosed in a sealing section of the secondary battery (see Darmawaskita, column 12 lines 38-56).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Takano and Franklin to include the teachings of Darmawaskita because enclosing the semiconductor chip in a sealing section of the secondary battery would have allowed the skilled artisan to prevent leakage outside of the sealed section.

Referring to claim 6, Takano and Franklin teach all the features of the claimed invention except that the liquid detection section includes a comparator having a first input connected to a constant current source and one of the terminals, and a second input connected to a reference voltage source.

Darmawaskita teaches that the liquid detection section includes a comparator having a first input connected to a constant current source and one of the terminals, and a second input connected to a reference voltage source (see Darmawaskita, column 5 lines 27-32).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Takano and Franklin to include the teachings of Darmawaskita because comparing current and voltage values would have allowed the skilled artisan to monitor the battery charge to prevent overcharging (see Darmawaskita, column 5 lines 34-40).

***Allowable Subject Matter***

4. Claim 5 is allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Claim 5 is allowable over the prior art of record because the combination of limitations which recite a secondary battery control unit comprising: a liquid detection section, wherein the liquid detection section controls the control section based on an impedance or resistance value detected between two electrically separated terminals, wherein the electrically separated terminals are separated by a distance of about 0.1 millimeters.

#### ***Response to Arguments***

6. Applicant's arguments filed 2 January 2008 have been fully considered but they are not persuasive.

Applicant argues that Takamo does not teach "continuously detecting infiltration or generation of a liquid." However, this limitation is met by Franklin. Franklin teaches continuously monitoring a leak condition while it exists (see Franklin, column 13 lines 46-52). It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Takamo to include the teachings of Franklin because continuously detecting infiltration or generation of a liquid would have allowed the skilled artisan to reduce the probability that the liquid detection is merely a false alarm.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY C. BARAN whose telephone number is (571)272-2211. The examiner can normally be reached on Monday to Friday 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARY C BARAN/  
17 March 2008

/Hal D Wachsman/  
Primary Examiner, Art Unit 2857